≋NCBI   **≋Nucleotide**

All Databases   PubMed   Nucleotide   Protein   Genome   Structure   OMIM   PMC   Journals   Books

Search [Nucleotide ▼] for [_____] [Go] [Clear]

Limits   Preview/Index   History   Clipboard   Details

Format: **GenBank** FASTA Graphics More Formats▾   Download▾   Save▾

This sequence has been updated. See current version.

GenBank: AY274119.2

SARS coronavirus TOR2, complete genome

Comment   Features   Sequence

```
LOCUS       AY274119              29736 bp    RNA     linear   VRL
23-APR-2003
DEFINITION  SARS coronavirus TOR2, complete genome.
ACCESSION   AY274119
VERSION     AY274119.2  GI:30088476
KEYWORDS    .
SOURCE      SARS coronavirus Tor2
  ORGANISM  SARS coronavirus Tor2
            Viruses; ssRNA positive-strand viruses, no DNA stage;
Nidovirales;
            Coronaviridae; Coronavirus.
REFERENCE   1  (bases 1 to 29736)
  CONSRTM   BCCA Genome Sciences Centre, British Columbia Centre
for Disease
            Control and National Microbiology Laboratory Canada
  TITLE     The complete genome of the SARS associated Coronavirus
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 29736)
  CONSRTM   BCCA Genome Sciences Centre, British Columbia Centre
for Disease
            Control and National Microbiology Laboratory Canada
  TITLE     Direct Submission
  JOURNAL   Submitted (13-APR-2003) Genome Sciences Centre, British
Columbia
            Cancer Research Centre, 600 West 10th Avenue,
Vancouver, BC V5Z
            4E6, Canada
REFERENCE   3  (bases 1 to 29736)
  CONSRTM   BCCA Genome Sciences Centre, British Columbia Centre
for Disease
            Control and National Microbiology Laboratory Canada
  TITLE     Direct Submission
  JOURNAL   Submitted (23-APR-2003) Genome Sciences Centre, British
Columbia
            Cancer Research Centre, 600 West 10th Avenue,
Vancouver, BC V5Z
            4E6, Canada
  REMARK    Sequence update by submitter
COMMENT     [WARNING] On Apr 30, 2003 this sequence was replaced by
            gi:30248028.
            On Apr 23, 2003 this sequence version replaced
gi:29826276.
FEATURES             Location/Qualifiers
```

Change Region Shown

Customize View

Analyze This Sequence

Run BLAST

Pick Primers

SARS Coronavirus Resource
Compiled data and information
relevant to SARS coronavirus.

Recent activity

Turn Off   Clear

SARS coronavirus TOR2,
complete genome

SARS coronavirus TOR2,
complete genome

AY274119.3 (1)   Nucleotide

AY274119 (0)   Protein

RecName: Full=Spike
glycoprotein; Short=S
glycoprotein; AltName:
Full=Peplomer protein;
Al...

» See more...

```
     source          1..29736
                     /organism="SARS coronavirus Tor2"
                     /mol_type="genomic RNA"
                     /isolate="Tor2"
                     /isolation_source="patient #2 with severe acute
                     respiratory syndrome (SARS)"
                     /db_xref="taxon:227984"
                     /country="Canada: Toronto"
ORIGIN
        1 ctacccagga aaagccaacc aacctcgatc tcttgtagat ctgttctcta
       aacgaacttt
       61 aaaatctgtg tagctgtcgc tcggctgcat gcctagtgca cctacgcagt
       ataaacaata
      121 ataaatttta ctgtcgttga caagaaacga gtaactcgtc cctcttctgc
       agactgctta
      181 cggtttcgtc cgtgttgcag tcgatcatca gcatacctag gtttcgtccg
       ggtgtgaccg
      241 aaaggtaaga tggagagcct tgttcttggt gtcaacgaga aaacacacgt
       ccaactcagt
      301 ttgcctgtcc ttcaggttag agacgtgcta gtgcgtggct tcggggactc
       tgtggaagag
      361 gcccatatcgg aggcacgtga acacctcaaa aatggcactt gtggtctagt
       agagctggaa
      421 aaaggcgtac tgccccagct tgaacagccc tatgtgttca ttaaacgttc
       tgatgcctta
      481 agcaccaatc acggccacaa ggtcgttgag ctggttgcag aaatggacgg
       cattcagtac
      541 ggtcgtagcg gtataacact gggagtactc gtgccacatg tgggcgaaac
       cccaattgca
      601 taccgcaatg ttcttcttcg taagaacggt aataagggag ccggtggtca
       tagctatggc
      661 atcgatctaa agtcttatga cttaggtgac gagcttggca ctgatcccat
       tgaagattat
      721 gaacaaaact ggaacactaa gcatggcagt ggtgcactcc gtgaactcac
       tcgtgagctc
      781 aatggaggtg cagtcactcg ctatgtcgac aacaatttct gtggcccaga
       tgggtaccct
      841 cttgattgca tcaaagattt tctcgcacgc gcgggcaagt caatgtgcac
       tctttccgaa
      901 caacttgatt acatcgagtc gaagagaggt gtctactgct gccgtgacca
       tgagcatgaa
      961 attgcctggt tcactgagcg ctctgataag agctacgagc accagacacc
       cttcgaaatt
     1021 aagagtgcca agaaatttga cactttcaaa ggggaatgcc caaagtttgt
       gtttcctctt
     1081 aactcaaaag tcaaagtcat tcaaccacgt gttgaaaaga aaaagactga
       gggtttcatg
     1141 gggcgtatac gctctgtgta ccctgttgca tctccacagg agtgtaacaa
       tatgcacttg
     1201 tctaccttga tgaaatgtaa tcattcgcat gaagtttcat ggcagacgtg
       cgactttctg
     1261 aaagccactt gtgaacattg tggcactgaa aatttagtta ttgaaggacc
       tactacatgt
     1321 gggtacctac ctactaatgc tgtagtgaaa atgccatgtc ctgcctgtca
       agacccagag
     1381 attggacctg agcatagtgt tgcagattat cacaaccact caaacattga
       aactcgactc
     1441 cgcaagggag gtaggactac atgtttttgga ggctgtgtgt ttgcctatgt
       tggctgctat
     1501 aataacgtg cctactgggt tcctcgtgct agtgctgata ttggctcagg
       ccatactggc
     1561 attactggtg acaatgtgga gaccttgaat gaggatctcc ttgagatact
       gagtcgtgaa
     1621 cgtgttaaca ttaacattgt tggcgatttt catttgaatg aagaggttgc
       catcatttg
     1681 gcatcttttct ctgcttctac aagtgcactt attgacacta taaagagtct
       tgattacaag
     1741 tctttcaaaa ccattgttga gtcctgcggt aactataaag ttaccaaggg
       aaagcccgta
     1801 aaaggtgctt ggaacattgg acaacagaga tcagttttaa caccactgtg
       tggttttccc
     1861 tcacaggctg ctggttatat tttgcgcgca cacttgatgc
```

```
      agcaaaccac
      1921 tcaattcctg atttgcaaag agcagctgtc accatacttg atggtatttc
tgaacagtca
      1981 ttacgtcttg tcgacgccat ggtttatact tcagacctgc tcaccaacag
tgtcattatt
      2041 atggcatatg taactggtag tcttgtacaa cagacttctc agtggttgtc
taatcttttg
      2101 ggcactactg ttgaaaaact caggcctatc tttgaatgga ttgaggcgaa
acttagtgca
      2161 ggagttgaat ttctcaagga tgcttgggag attctcaaat ttctctattac
aggtgttttt
      2221 gacatcgtca agggtcaaat acaggttgct tcagataaca tcaaggattg
tgtaaaatgc
      2281 ttcattgatg ttgttaacaa ggcactcgaa atgtgcattg atcaagtcac
tatcgctggc
      2341 gcaaagttgc gatcactcaa cttaggtgaa gtcttcatcg ctcaaagcaa
gggactttac
      2401 cgtcagtgta tacgtggcaa ggagcagctg caactactca tgctcttaa
ggcaccaaaa
      2461 gaagtaacct ttcttgaagg tgattcacat gacacagtac ttacctctga
ggaggttgtt
      2521 ctcaagaacg gtgaactcga agcactcgag acgcccgttg atagcttcac
aaatggagct
      2581 atcgttggca caccagtctg tgtaaatggc ctcatgctct tagagattaa
ggacaaagaa
      2641 caatactgcg cattgtctcc tggtttactg gctacaaaca atgtctttcg
cttaaaaggg
      2701 ggtgcaccaa ttaaaggtgt aacctttgga gaagatactg tttgggaagt
tcaaggttac
      2761 aagaatgtga gaatcacatt tgagctgtga tgaacgtgttg acaaagtgct
taatgaaaag
      2821 tgctctgtct acactgttga atccggtacc gaagttactg agtttgcatg
tgttgtagca
      2881 gaggctgttg tgaagacttt acaaccagt tctgatctcc ttaccaacat
gggtattgat
      2941 cttgatgagt ggagtgtagc tacattctac ttatttgatg atgctggtga
agaaacttt
      3001 tcatcacgta tgtattgttc cttttaccct ccagatgagg aagaagagga
cgatgcagag
      3061 tgtgaggaag aagaaattga tgaaacctgt gaacatgagt acgtacaga
ggatgattat
      3121 caaggtctcc ctctggaatt tggtgcctca gctgaaacag ttcgagttga
ggaagaagaa
      3181 gaggaagact ggctggatga tactactgag caatcagaga ttgagccaga
accagaacct
      3241 acacctgaag aaccagttaa tcagtttact ggttatttaa aacttactga
caatgttgcc
      3301 attaaatgtg ttgacatcgt taaggaggca caaagtgcta atcctatggt
gattgtaaat
      3361 gctgctaaca tacacctgaa acatgttggt ggtgtagcag gtgcactcaa
caaggcaacc
      3421 aatggtgcca tgcaaaagga gagtgatgat tacattaagc taaatggccc
tgttgttgga
      3481 ggagggtctt gtttgctttc tggacataat cttgctaaga agtgtctgca
tgtgttggga
      3541 cctaacctaa atgcaggtga ggacatccag cttcttaagg cagcatatga
aaatttcaat
      3601 tcacaggaca tcttacttgc accattgttg tcagcaggca tatttggtgc
taaaccactt
      3661 cagtctttac aagtgtgcgt gcagacggtt cgtcacacagg tttatattgc
agtcaatgac
      3721 aaagctcttt atgagcaggt tgtcatggat tatcttgata acctgaagcc
tagagtggaa
      3781 gcacctaaac aagaggagc accaaacaca gaagattcca aaactgagga
gaaatctgtc
      3841 gtacagaagc ctgtcgatgt gaagccaaaa attaaggcct gcattgatga
ggttaccaca
      3901 acactggaag aaactaagt tcttaccaat aagttactct tgtttgctga
tatcaatggt
      3961 aagctttacc atgattctca gaacatgctt agaggtgaag atatgtcttt
ccttgagaag
      4021 gatgcaccct acatggtagg tgatgttatc actagtggtg atatcacttg
```

```
      tgttgtaata
      4081 ccctccaaaa aggctggtgg cactactgag atgctctcaa gagctttgaa
gaaagtgcca
      4141 gttgatgagt atataaccac gtaccctgga caaggatgtg ctggttatac
acttgaggaa
      4201 gctaagactg ctcttaagaa atgcaaatct gcattttatg tactaccttc
agaagcacct
      4261 aatgctaagg aagagattct aggaactgta tcctggaatt tgagagaaat
gcttgctcat
      4321 gctgaagaga caagaaaatt aatgctata tgcatggatg ttagagccat
aatggcaacc
      4381 atccaacgta agtataaagg aattaaaaatt caagagggca tcgttgacta
tggtgtccga
      4441 ttcttctttt atactagtaa agagcctgta gcttctatta ttacgaagct
gaactctcta
      4501 aatgagccgc ttgtcacaat gccaattggt tatgtgacac atggttttaa
tcttgaagag
      4561 gctgcgcgct gtatgcgttc tcttaaagct cctgccgtag tgtcagtatc
atcaccagat
      4621 gctgttacta catataatgg atacctcact tcgtcatcaa agacatctga
ggagcacttt
      4681 gtagaaacag tttctttggc tggctcttac agagattggt cctattcagg
acagcgtaca
      4741 gagttaggtg ttgaatttct taagcgtggt gacaaaattg tgtaccacac
tctggagagc
      4801 cccgtcgagt ttcatcttga cggtgaggtt ctttcacttg acaaactaaa
gagtctctta
      4861 tccctgcggg aggttaagac tataaaagtg ttcacaactg tggacaacac
taatctccac
      4921 acacagcttg tggatatgtc tatgacatat ggacagcagt ttggtccaac
atacttggat
      4981 ggtgctgatg ttacaaaaat taaacctcat gtaaatcatg agggtaagac
tttctttgta
      5041 ctacctagtg atgacacact acgtagtgaa gctttcgagt actaccatac
tcttgatgag
      5101 agtttcttg gtaggtacat gtctgcttta aaccacacaa agaaatggaa
atttcctcaa
      5161 gttggtggtt taacttcaat taaatgggct gataacaatt gttatttgtc
tagtgtttta
      5221 ttagcacttc aacagcttga agtcaaattc aatgcaccag cacttcaaga
ggcttattat
      5281 agagcccgtg ctggtgatgc tgctaacttt tgtgcactca tactcgctta
cagtaataaa
      5341 actgttggcg agcttggtga tgtcagagaa actatgaccc atcttctaca
gcatgctaat
      5401 ttggaatctg caaagcgagt tcttaatgtg gtgtgtaaac attgtggtca
gaaaactact
      5461 accttaacgg gtgtagaagc tgtgatgtat atgggtactc tatcttatga
taatcttaag
      5521 acaggtgttt ccattccatg tgtgtgtggt cgtgatgcta cacaatatct
agtacaacaa
      5581 gagtcttctt ttgttatgat gtctgcacca cctgctgagt ataaattaca
gcaaggtaca
      5641 ttcttatgtg cgaatgagta cactggtaac tatcagtgtg gtcattacac
tcatataact
      5701 gctaaggaga ccctctatcg tattgacgga gctcaccttta caaagatgtc
agagtacaaa
      5761 ggaccagtga ctgatgtttt ctacaaggaa acatcttaca ctacaaccat
caagcctgtg
      5821 tcgtataaac tcgatggagt tacttacaca gagattgaac caaaattgga
tgggtattat
      5881 aaaaaggata atgcttacta tacagagcag cctatagacc ttgtaccaac
tcaaccatta
      5941 ccaaatgcga gtttttgataa tttcaaactc acatgttcta acacaaaatt
tgctgatgat
      6001 ttaaatcaaa tgacaggctt cacaaagcca gcttcacgag agctatctgt
cacattcttc
      6061 ccagacttga atggcgatgt agtggctatt gactatagac actattcagc
gagtttcaag
      6121 aaaggtgcta aattactgca taagccaatt gtttggcaca ttaaccaggc
tacaaccaag
      6181 acaacgttca aaccaaacac ttggtgttta cgttgtcttt ggagtacaaa
```

```
       gccagtagat
       6241 acttcaaatt catttgaagt tctggcagta gaagacacac aaggaatgga
caatcttgct
       6301 tgtgaaagtc aacaacccac ctctgaagaa gtagtggaaa atcctaccat
acagaaggaa
       6361 gtcatagagt gtgacgtgaa aactaccgaa gttgtaggca atgtcatact
taaaccatca
       6421 gatgaaggtg ttaaagtaac acaagagtta ggtcatgagg atcttatggc
tgcttatgtg
       6481 gaaaacacaa gcattaccat taagaaacct aatgagcttt cactagcctt
aggtttaaaa
       6541 acaattgcca ctcatggtat tgctgcaatt aatagtgttc cttggagtaa
aattttggct
       6601 tatgtcaaac cattcttagg acaagcagca attacaacat caaattgcgc
taagagatta
       6661 gcacaacgtg tgtttaacaa ttatatgcct tatgtgttta cattattgtt
ccaattgtgt
       6721 acttttacta aaagtaccaa ttctagaatt agagcttcac tacctacaac
tattgctaaa
       6781 aatagtgtta agagtgttgc taaattatgt ttggatgccg gcattaatta
tgtgaagtca
       6841 cccaaatttt ctaaattgtt cacaatcgct atgtggctat tgttgttaag
tatttgctta
       6901 ggttctctaa tctgtgtaac tgctgctttt ggtgtactct tatctaattt
tggtgctcct
       6961 tcttattgta atggcgttag agaattgtat cttaattcgt ctaacgttac
tactatggat
       7021 ttctgtgaag gttcttttcc ttgcagcatt tgtttaagtg gattagactc
ccttgattct
       7081 tatccagctc ttgaaaccat tcaggtgacg atttcatcgt acaagctaga
cttgacaatt
       7141 ttaggtctgg ccgctgagtg ggtttggca tatatgttgt tcacaaaatt
cttttattta
       7201 ttaggtcttt cagctataat gcaggtgttc tttggctatt ttgctagtca
tttcatcagc
       7261 aattcttggc tcatgtggtt tatcattagt attgtacaaa tggcacccgt
ttctgcaatg
       7321 gttaggatgt acatcttctt tgcttctttc tactacatat ggaagagcta
tgttcatatc
       7381 atggatggtt gcacctcttc gacttgcatg atgtgctata agcgcaatcg
tgccacacgc
       7441 gttgagtgta caactattgt taatggcatg aagagatctt tctatgtcta
tgcaaatgga
       7501 ggccgtggct tctgcaagac tcacaattgg aattgtctca attgtgacac
attttgcact
       7561 ggtagtacat tcattagtga tgaagttgct cgtgatttgt cactccagtt
taaaagacca
       7621 atcaaccota ctgaccagtc atcgtatatt gttgatagtg ttgctgtgaa
aaatggcgcg
       7681 cttcacctct actttgacaa ggctggtcaa aagacctatg agagacatcc
gctctcccat
       7741 tttgtcaatt tagacaattt gagagctaac aacactaaag gttcactgcc
tattaatgtc
       7801 atagttttg atggcaagtc caaatgcgac gagtctgctt ctaagtctgc
ttctgtgtac
       7861 tacagtcagc tgatgtgcca acctattctg ttgcttgacc aagctcttgt
atcagacgtt
       7921 ggagatagta ctgaagtttc cgttaagatg tttgatgtct tatgtcgacac
cttttcagca
       7981 acttttagtg ttcctatgga aaaacttaag gcacttgttg ctacagctca
cagcgagtta
       8041 gcaaagggtg tagctttaga tggtgtcctt tctacattcg tgtcagctgc
ccgacaaggt
       8101 gttgttgata ccgatgttga cacaaaggat gttattgaat gtctcaaact
ttcacatcac
       8161 tctgacttag aagtgacagg tgacagttgt aacaatttca tgctctacca
taataaggtt
       8221 gaaaacatga cgcccagaga tcttggcgca tgtattgact gtaatgcaag
gcatatcaat
       8281 gcccaagtag caaaaagtca caatgtttca ctcatctgga atgtaaaaga
ctacatgtct
       8341 ttatctgaac agctgcgtaa acaaattcgt agtgctgcca agaagaacaa
```

```
catacctttt
     8401 agactaactt gtgctacaac tagacaggtt gtcaatgtca taactactaa
aatctcactc
     8461 aagggtggta agattgttag tacttgtttt aaacttatgc ttaaggccac
attattgtgc
     8521 gttcttgctg cattggtttg ttatatcgtt atgccagtac atacattgtc
aatccatgat
     8581 ggttacacaa atgaaatcat tggttacaaa gccattcagg atggtgtcac
tcgtgacatc
     8641 atttctactg atgattgttt tgcaaataaa catgctggtt ttgacgcatg
gtttagccag
     8701 cgtggtggtt catacaaaaa tgacaaaagc tgccctgtag tagctgctat
cattacaaga
     8761 gagattggtt tcatagtgcc tggcttaccg ggtactgtgc tgagagcaat
caatggtgac
     8821 ttcttgcatt ttctacctcg tgttttttagt gctgttggca acatttgcta
cacaccttcc
     8881 aaactcattg agtatagtga ttttgctacc tctgcttgcg ttcttgctgc
tgagtgtaca
     8941 atttttaagg atgctatggg caaacctgtg ccatattgtt atgacactaa
tttgctagag
     9001 ggttctattt cttatagtga gcttcgtcca gacactcgtt atgtgcttat
ggatggttcc
     9061 atcatacagt ttcctaacac ttacctggag ggttctgtta gagtagtaac
aacttttgat
     9121 gctgagtact gtagacatgg tacatgcgaa aggtcagaag taggtatttg
cctatctacc
     9181 agtgtagat gggttcttaa taatgagcat tacagagctc tatcaggagt
tttctgtggt
     9241 gttgatgcga tgaatctcat agctaacatc tttactcctc ttgtgcaacc
tgtgggtgct
     9301 ttagatgtgt ctgcttcagt agtggctggt ggtattattg ccatattggt
gacttgtgct
     9361 gcctactact ttatgaaatt cagacgtgtt tttggtgagt acaaccatgt
tgttgctgct
     9421 aatgcacttt tgttttttgat gtctttcact atactctgtc tggtaccagc
ttacagcttt
     9481 ctgccgggag tctactcagt ctttttacttg tacttgacat tctatttcac
caatgatgtt
     9541 tcattcttgg ctcaccttca atggtttgcc atgtttttctc ctattgtgcc
ttttggata
     9601 acagcaatct atgtattctg tatttctctg aagcactgcc attggttctt
taacaactat
     9661 cttaggaaaa gagtcatgtt taatggagtt acatttagta ccttcgagga
ggctgctttg
     9721 tgtacctttt tgctcaacaa ggaaatgtac ctaaaattgc gtagcgagac
actgttgcca
     9781 cttacacagt ataacaggta tcttgctcta tataacaagt acaagtattt
cagtggagcc
     9841 ttagatacta ccagtcatcg tgaagcagct tgctgccact tagcaaaggc
tctaaatgac
     9901 tttagcaact caggtgctga tgttctctac caaccaccac agacatcaat
cacttctgct
     9961 gttctgcaga gtggtttttag gaaaatggca ttcccgtcag gcaaagttga
agggtgcatg
    10021 gtacaagtaa cctgtggaac tacaactctt aatggattgt ggttggatga
cacagtatac
    10081 tgtccaagac atgtcatttg cacagcagaa gacatgctta atcctaacta
tgaagatctg
    10141 ctcattcgca aatccaacca tagctttctt gttcaggctg gcaatgttca
acttcgtgtt
    10201 attggccatt ctatgcaaaa ttgtctgctt aggcttaaag ttgatacttc
taaccctaag
    10261 acacccaagt ataaatttgt ccgtatccaa cctggtcaaa cattttcagt
tctagcatgc
    10321 tacaatggtt caccatctgg tgtttatcag tgtgccatga gacctaatca
taccattaaa
    10381 ggttctttcc ttaatggatc atgtggtagt gttggtttta acattgatta
tgattgcgtg
    10441 tcttttctgct atatgcatca tatggagctt ccaaccaggag tacacgctgg
tactgactta
    10501 gaaggtaaat tctatggtcc atttgttgac agacaaactg cacaggctgc
```

```
    aggtacagac
    10561 acaaccataa cattaaatgt tttggcatgg ctgtatgctg ctgttatcaa
    tggtgatagg
    10621 tggtttctta atagattcac cactactttg aatgacttta accttgtggc
    aatgaagtac
    10681 aactatgaac ctttgacaca agatcatgtt gacatattgg gacctctttc
    tgctcaaaca
    10741 ggaattgccg tcttagatat gtgtgtgct ttgaaagagc tgctgcagaa
    tggtatgaat
    10801 ggtcgtacta tccttggtag cactattttta gaagatgagt ttacaccatt
    tgatgttgtt
    10861 agacaatgct ctggtgttac cttccaaggt aagttcaaga aaattgttaa
    gggcactcat
    10921 cattggatgc ttttaacttt cttgacatca ctattgattc ttgttcaaag
    tacacagtgg
    10981 tcactgtttt tctttgttta cgagaatgct ttcttgccat ttactcttgg
    tattatggca
    11041 attgctgcat gtgctatgct gcttgtttaag cataagcacg cattcttgtg
    cttgttttctg
    11101 ttaccttctc ttgcaacagt tgcttacttt aatatgtct acatgcctgc
    tagctgggtg
    11161 atgcgtatca tgacatggct tgaattggct gacactagct tgtctggtta
    taggcttaag
    11221 gattgtgtta tgtatgcttc agctttagtt ttgcttattc tcatgacagc
    tcgcactgtt
    11281 tatgatgatg ctgctagacg tgtttggaca ctgatgaatg tcattacact
    tgtttacaaa
    11341 gtctactatg gtaatgcttt agatcaagct atttccatgt gggccttagt
    tatttctgta
    11401 acctctaact attctggtgt cgttacgact atcatgtttt tagctagagc
    tatagtgttt
    11461 gtgtgtgttg agtattaccc attgttattt attactggca acacacttaca
    gtgtatcatg
    11521 cttgtttatt gtttcttagg ctattgttgc tgctgctact ttggccttttt
    ctgtttactc
    11581 aaccgttact tcaggcttac tcttggtgtt tatgactact tggtctctac
    acaagaattt
    11641 aggtatatga actcccaggg gcttttgcct cctaagagta gtattgatgc
    tttcaagctt
    11701 aacattaagt tgttggggat tggaggtaaa ccatgtatca aggttgctac
    tgtacagtct
    11761 aaaatgtctg acgtaaagtg cacatctgtg gtactgctct cggttcttca
    acaacttaga
    11821 gtagagtcat cttctaaatt gtgggcacaa tgtgtacaac tccacaatga
    tattcttctt
    11881 gcaaaagaca caactgaagc tttcgagaag atggtttctc ttttgtctgt
    tttgctatcc
    11941 atgcagggtg ctgtagacat taataggttg tgcgaggaaa tgctcgataa
    ccgtgctact
    12001 cttcaggcta ttgcttcaga atttagttct ttaccatcat atgccgctta
    tgccactgcc
    12061 caggaggcct atgagcaggc tgtagctaat ggtgattctg aagtcgttct
    caaaaagtta
    12121 aagaaatctt tgaatgtggc taaatctgag tttgaccgtg atgctgccat
    gcaacgcaag
    12181 ttggaaaaga tggcagatca ggctatgacc caaatgtaca aacaggcaag
    atctgaggac
    12241 aagagggcaa aagtaactag tgctatgcaa acaatgctct tcactatgct
    taggaagctt
    12301 gataatgatg cacttaacaa cattatcaac aatgcgcgtg atggttgtgt
    tccactcaac
    12361 atcataccat tgactacagc agccaaatc atgtgttgtt gtccctgatta
    tggtacctac
    12421 aagaaacactt gtgatggtaa caccttttaca tatgcatctg cactctggga
    aatccagcaa
    12481 gttgttgatg cggatagcaa gattgttcaa cttagtgaaa ttaacatgga
    caattcacca
    12541 aatttggctt ggcctcttat tgttacagct ctaaggagca actcagctgt
    taaactacag
    12601 aataatgaac tgagtccagt agcactacga cagatgtcct gtgctggctgg
    taccacacaa
    12661 acagcttgta ctgatgacaa tgcacttgcc tactataaca attcgaaggg
```

```
      aggtaggttt
   12721 gtgctggcat tactatcaga ccaccaagat ctcaaatggg ctagattccc
taagagtgat
   12781 ggtacaggta caatttacac agaactggaa ccaccttgta ggtttgttac
agacacacca
   12841 aaagggccta aagtgaaata cttgtacttc atcaaaggct taaacaacct
aaatagaggt
   12901 atggtgctgg gcagtttagc tgctacagta cgtcttcagg ctggaaatgc
tacagaagta
   12961 cctgccaatt caactgtgct ttccttctgt gcttttgcag tagaccctgc
taaagcatat
   13021 aaggattacc tagcaagtgg aggacaacca atcaccaact gtgtgaagat
gttgtgtaca
   13081 cacactggta caggacaggc aattactgta acaccagaag ctaacatgga
ccaagagtcc
   13141 tttggtggtg cttcatgttg tctgtattgt agatgccaca ttgaccatcc
aaatcctaaa
   13201 ggattctgtg acttgaaagg taagtacgtc caaatacctg ccacttgtgc
taatgaccca
   13261 gtgggtttta cacttagaaa cacagtctgt accgtctgcg gaatgtggaa
aggttatggc
   13321 tgtagttgtg accaactccg cgaacccttg atgcagtctg cggatgcatc
aacgttttta
   13381 aacggggttg cggtgtaagt gcagcccgtc ttacaccgtg cggcacaggc
actagtactg
   13441 atgtcgtcta cagggctttt gatatttaca acgaaaaagt tgctggtttt
gcaaagttcc
   13501 taaaaactaa ttgctgtcgc ttccaggaga aggatgagga aggcaattta
ttagactctt
   13561 actttgtagt taagaggcat actatgtcta actaccaaca tgaagagact
atttataact
   13621 tggttaaaga ttgtccagcg gttgctgtcc atgacttttt caagtttaga
gtagatggtg
   13681 acatggtacc acatatatca cgtcagcgtc taactaaata cacaatggct
gatttagtct
   13741 atgctctacg tcattttgat gagggtaatt gtgatacatt aaaagaaata
ctcgtcacat
   13801 acaattgctg tgatgatgat tatttcaata agaaggattg gtatgacttc
gtagagaatc
   13861 ctgacatctt acgcgtatat gctaacttag gtgagcgtgt acgccaatca
ttattaaaga
   13921 ctgtacaatt ctgcgatgct atgcgtgatg caggccattg aggcgtactg
acattagata
   13981 atcaggatct taatgggaac tggtacgatt tcggtgattt cgtacaagta
gcaccaggct
   14041 gcggagttcc tattgtggat tcatattact cattgctgat gcccatcctc
actttgacta
   14101 gggcattggc tgctgagtcc catatggatg ctgatctcgc aaaaccactt
attaagtggg
   14161 atttgctgaa atatgatttt acggaagaga gactttgtct cttcgaccgt
tattttaaat
   14221 attgggacca gacataccat cccaattgta ttaactgttt ggatgatagg
tgtatccttc
   14281 attgtgcaaa cttttaatgtg ttattttcta ctgtgtttcc acctacaagt
tttggaccac
   14341 tagtaagaaa aatatttgta gatggtgttc cttttgttgt ttcaactgga
taccattttc
   14401 gtgagttagg agtcgtacat aatcaggatg taaacttaca tagctcgcgt
ctcagtttca
   14461 aggaactttt agtgtatgct gctgatccag ctatgcatgc agcttctggc
aatttattgc
   14521 tagataaacg cactacatgc ttttcagtag ctgcactaac aaacaatgtt
gctttctaaa
   14581 ctgtcaaacc cggtaatttt aataaagact tttatgactt tgctgtgtct
aaaggtttct
   14641 ttaaggaagg aagttctgat gaactaaaac acttcttctt tgctcaggat
ggcaacgctg
   14701 ctatcagtga ttatgactat tatcgttata atctgccaac aatgtgtgat
atcagacaac
   14761 tcctattcgt agttgaagtt gttgataaat actttgattg ttacgatggt
ggctgtatta
   14821 atgccaacca gtaatccgtt aacaatctgg ataaatcagc tggtttccca
```

```
        tttaataaat
   14881 ggggtaaggc tagactttat tatgatccaa tgagttatga ggatcaagat
gcactttttcg
   14941 cgtatactaa gcgtaatgtc atccctacta taactcaaat gaatcttaag
tatgccatta
   15001 gtgcaaagaa tagagctcgc accgtagctg gtgtctctat ctgtagtact
atgacaaata
   15061 gacagtttca tcagaaatta ttgaagtcaa tagccgccac tagaggagct
actgtggtaa
   15121 ttggaacaag caagttttac ggtggctggc ataatatgtt aaaaactgtt
tacagtgatg
   15181 tagaaactcc acaccttatg ggttgggatt atccaaaatg tgacagagcc
atgcctaaca
   15241 tgcttaggat aatggcctct cttgttcttg ctcgcaaaca taacacttgc
tgtaacttat
   15301 cacaccgttt ctacaggtta gctaacgagt gtgcgcaagt attaagtgag
atggtcatgt
   15361 gtggcggctc actatatgtt aaaccaggtg gaacatcatc cggtgatgct
acaactgctt
   15421 atgctaatag tgtctttaac atttgtcaag ctgttacagc caatgtaaat
gcacttcttt
   15481 caactgatgg taataagata gctgacaagt atgtccgcaa tctacaacac
aggctctatg
   15541 agtgtctcta tagaaataga gatgttgatc atgaattcgt ggatgagttt
tacgcttacc
   15601 tgcgtaaaca tttctccatg atgattcttt ctgatgatgc cgttgtgtgc
tataacagta
   15661 acatatgcgg caaggttta gtagctagca ttaagaactt taaggcagtt
ctttattatc
   15721 aaaataatgt gttcatgtct gaggcaaaat gttggactga gactgacctt
actaaaggac
   15781 ctcacgaatt ttgctcacag catacaatgc tagttaaaca aggagatgat
tacgtgtacc
   15841 tgccttaccc agatccatca agaatattag gcgcaggctg ttttgtcgat
gatattgtca
   15901 aaacagatgg tacacttatg attgaaaggt tcgtgtcact ggctattgat
gcttacccac
   15961 ttacaaaaca tcctaatcag gagtatgctg atgtctttca cttgtattta
caatacatta
   16021 gaaagttaca tgatgagctt actggccaca tgttggacat gtattccgta
atgctaacta
   16081 atgataacac ctcacggtac tgggaacctg agttttatga ggctatgtac
acaccacata
   16141 cagtcttgca ggctgtaggt gcttgtgtat tgtgcaattc acagacttca
cttcgttgcg
   16201 gtgcctgtat taggagacca ttcctatgtt gcaagtgctg ctatgaccat
gtcatttcaa
   16261 catcacacaa attagtgttg tctgttaatc cctatgtttg caatgcccca
ggtgtgatg
   16321 tcactgatgt gacacaactg tatctaggag gtatgagcta ttattgcaag
tcacataagc
   16381 ctcccattag tttttccatta tgtgctaatg gtcaggtttt tggtttatac
aaaaacacat
   16441 gtgtaggcag tgacaatgtc actgacttca atgcgatagc aacatgtgat
tggactaatg
   16501 ctggcgatta catacttgcc aacacttgta ctgagagact caagcttttc
gcagcagaaa
   16561 cgctcaaagc cactgaggaa acatttaagc tgtcatatgg tattgccact
gtacgcgaag
   16621 tactctctga cagagaattg catctttcat gggaggttgg aaaacctaga
ccaccattga
   16681 acagaaacta tgtctttact ggttaccgtg taactaaaaa tagtaaagta
cagattggag
   16741 agtacacctt tgaaaaaggt gactatggtg atgctgttgt gtacagaggt
actacgacat
   16801 acaagttgaa tgttggtgat tactttgtcg tgacatctca cactgtaatg
ccacttagtg
   16861 cacctactct agtgccacaa gagcacatg tgagaattac tggcttgtac
ccaacactca
   16921 acatctcaga tgagttttct agcaatgttg caaattatca aaaggtcggc
atgcaaaagt
   16981 actctcacact ccaaggacca cctggtactg gtaagagtca ttttgccatc
```

```
      ggacttgctc
     17041 tctattaccc atctgctcgc atagtgtata cggcatgctc tcatgcagct
      gttgatgccc
     17101 tatgtgaaaa ggcattaaaa tatttgccca tagataaatg tagtagaatc
      atacctgcgc
     17161 gtgcgcgcgt agagtgtttt gataaattca aagtgaattc aacactagaa
      cagtatgttt
     17221 tctgcactgt aaatgcattg ccagaaacaa ctgctgacat tgtagtcttt
      gatgaaatct
     17281 ctatggctac taattatgac ttgagtgttg tcaatgctag acttcgtgca
      aaacactacg
     17341 tctatattgg cgatcctgct caattaccag ccccccgcac attgctgact
      aaaggcacac
     17401 tagaaccaga atattttaat tcagtgtgca gacttatgaa aacaataggt
      ccagacatgt
     17461 tccttggaac ttgtcgccgt tgtcctgctg aaattgttga cactgtgagt
      gctttagttt
     17521 atgacaataa gctaaaagca cacaaggata agtcagctca atgcttcaaa
      atgttctaca
     17581 aaggtgttat tacacatgat gtttcatctg caatcaacag acctcaaata
      ggcgttgtaa
     17641 gagaatttct tacacgcaat cctgcttgga gaaaagtcgt ttttatctca
      ccttataatt
     17701 cacagaacgc tgtagcttca aaaatccttag gattgcctac gcagactgtt
      gattcatcac
     17761 agggttctga atatgactat gtcatattca cacaaactac tgaaacagca
      cactcttgta
     17821 atgtcaaccg cttcaatgtg gctatcacaa gggcaaaaat tggcattttg
      tgcataatgt
     17881 ctgatagaga tctttatgac aaaactgcaat ttacaagtct agaaataccca
      cgtcgcaatg
     17941 tggctacatt acaagcagaa aatgtaactg gactttttaa ggactgtagt
      aagatcatta
     18001 ctggtcttca tcctacacag gcacctacac acctcagcgt tgatataaag
      ttcaagactg
     18061 aaggattatg tgttgacata ccaggcatac caaaggacat gacctaccgt
      agactcatct
     18121 ctatgatggg tttcaaaatg aattaccaag tcaatggtta ccctaatatg
      tttatcaccc
     18181 gcgaagaagc tattcgtcac gttcgtgcgt ggattggctt tgatgtagag
      ggctgtcatg
     18241 caactagaga tgctgtgggt actaacctac ctctccagct aggatttttct
      acaggtgtta
     18301 acttagtagc tgtaccgact ggttatgttg acactgaaaa taacacagaa
      ttcaccagag
     18361 ttaatgcaaa acctccacca ggtgaccagt ttaaacatct tataccactc
      atgtataaag
     18421 gcttgccctg gaatgtagtg cgtattaaga tagtacaaat gctcagtgat
      acactgaaag
     18481 gattgtcaga cagagtcgtg ttcgtccttt gggcgcatgg ctttgagctt
      acatcaatga
     18541 agtactttgt caagattgga cctgaaagaa cgtgttgtct gtgtgacaaa
      cgtgcaactt
     18601 gctttttctac ttcatccagat acttatgcct gctggaatca ttctgtgggt
      tttgactatg
     18661 tctataaccc atttatgatt gatgttcagc agtgggggctt tacgggtaac
      cttcagagta
     18721 accatgacca acattgccag gtacatggaa atgcacatgt ggctagttgt
      gatgctatca
     18781 tgactagatg tttagcagtc catgagtgct ttgttaagcg cgttcgattgg
      tctgttgaat
     18841 acccctattat aggagatgaa ctgagggtta atttcgcttg cagaaaagta
      caacacatgg
     18901 ttgtgaagtc tgcattgctt gctgataagt ttccagttct tcatgacatt
      ggaaatccaa
     18961 aggctatcaa gtgtgtgcct caggctgaag tagaatggaa gttctacgat
      gctcagccat
     19021 gtagtgacaa agcttacaaa atagaggaac tcttctattc ttatgctaca
      catcacgata
     19081 aattcactga tggtgtttgt tgttttggga attgtaacgt tgatcgttac
      ccagccaatg
     19141 caattgtgtg taggtttgac acaagagtct tgtcaaactt gaacttacca
```

```
      ggctgtgatg
       19201 gtggtagttt gtatgtgaat aagcatgcat tccacactcc agctttcgat
      aaaagtgcat
       19261 ttactaattt aaagcaattg cctttctttt actattctga tagtccttgt
      gagtctcatg
       19321 gcaaacaagt agtgtcggat attgattatg ttccactcaa atctgctacg
      tgtattacac
       19381 gatgcaattt aggtggtgct gtttgcagac accatgcaaa tgagtaccga
      cagtacttgg
       19441 atgcatataa tatgtatgatt tctgctggat ttagcctatg gatttacaaa
      caatttgata
       19501 cttataacct gtggaataca tttaccaggt tacagagttt agaaaatgtg
      gcttataatg
       19561 ttgttaataa aggacacttt gatggacacg ccggcgaagc acctgtttcc
      atcattaata
       19621 atgctgtttta cacaaaggta gatggtattg atgtggagat ctttgaaaat
      aagacaacac
       19681 ttcctgttaa tgttgcattt gagctttggg ctaagcgtaa cattaaacca
      gtgccagaga
       19741 ttaagatact caataatttg ggtgttgata tcgctgctaa tactgtaatc
      tgggactaca
       19801 aaagagaagc cccagcacat gtatctacaa taggtgtctg cacaatgact
      gacattgcca
       19861 agaaacctac tgagagtgct tgttcttcac ttactgtctt gtttgatggt
      agagtggaag
       19921 gacaggtaga ccttttttaga aacgcccgta atggtgtttt aataacagaa
      ggttcagtca
       19981 aaggtctaac accttcaaag ggaccagcac aagctagcgt caatggagtc
      acattaattg
       20041 gagaatcagt aaaaacacag tttaactact ttaagaaagt agacggcatt
      attcaacagt
       20101 tgcctgaaac ctactttact cagagcagag acttagagga ttttaagccc
      agatcacaaa
       20161 tggaaactga ctttctcgag ctcgctatgg atgaattcat acagcgatat
      aagctcgagg
       20221 gctatgcctt cgaacacatc gtttatggag atttcagtca tggacaactt
      ggcggtcttc
       20281 atttaatgat aggcttagcc aagcgctcac aagattcacc acttaaatta
      gaggatttta
       20341 tccctatgga cagcacagtg aaaaattact tcataacaga tgcgcaaaca
      ggttcatcaa
       20401 aatgtgtgtg ttctgtgatt gatcttttac ttgatgactt tgtcgagata
      ataaagtcac
       20461 aagatttgtc agtgatttca aaagtggtca aggttacaat tgactatgct
      gaaatttcat
       20521 tcatgctttg gtgtaaggat ggacatgttg aaaccttcta cccaaaacta
      caagcaagtc
       20581 aagcgtggca accaggtgtt gcgatgccta acttgtacaa gatgcaaaga
      atgcttcttg
       20641 aaaagtgtga ccttcagaat tatggtgaaa atgctgttat accaaaaagga
      ataatgatga
       20701 atgtcgcaaa gtatactcaa ctgtgtcaat acttaaatac acttacttta
      gctgtaccct
       20761 acaacatgag agttattcac tttggtgctg gctctgataa aggagttgca
      ccaggtacag
       20821 ctgtgctcag acaatggttg ccaactggca cactacttgt cgattcagat
      cttaatgact
       20881 tcgtctccga cgcagattct actttaattg gagactgtgc aacagtacat
      acggctaata
       20941 aatgggacct tattattagc gatatgtatg accctaggac caaacatgtg
      acaaaagaga
       21001 atgactctaa agaaggggttt ttcacttatc tgtgtggatt tataaagcaa
      aaactagccc
       21061 tgggtggttc tatagctgta aagataacga agcattcttg gaatgctgac
      ctttacaagc
       21121 ttatgggcca ttttctcatg tggacagctt ttgttacaaa tgtaaatgca
      tcatcatcgg
       21181 aagcattttt aattggggct aactatcttg gcaagccgaa ggaacaaatt
      gatggctata
       21241 ccatgcatgc taactacatt ttctgtggagga acacaaatcc tatccagttg
      tcttcctatt
       21301 cactctttga catgagcaaa tttcctctta aattaagagg aactgctgta
```

```
       atgtctctta
    21361 aggagaatca aatcaatgat gatgtttatt ctcttctgga aaaaggtagg
       cttatcatta
    21421 gagaaaacaa cagagttgtg gtttcaagtg atattccttgt taacaactaa
       acgaacatgt
    21481 ttattttctt attatttctt actctcacta gtggtagtga ccttgaccgg
       tgcaccactt
    21541 ttgatgatgt tcaagctcct aattacactc aacatacttc atctatgagg
       ggggtttact
    21601 atcctgatga aatttttaga tcagacactc tttatttaac tcaggattta
       tttcttccat
    21661 tttattctaa tgttacaggg tttcatacta ttaatcatac gtttggcaac
       cctgtcatac
    21721 cttttaagga tggtatttat tttgctgcca cagagaaatc aaatgttgtc
       cgtggttggg
    21781 tttttggttc taccatgaac aacaagtcac agtcggtgat tattattaac
       aattctacta
    21841 atgttgttat acgagcatgt aactttgaat tgtgtgacaa ccctttctctt
       gctgtttcta
    21901 aacccatggg tacacagaca catactatga tattccgataa tgcatttaat
       tgcactttcg
    21961 agtacatatc tgatgccttt tcgcttgatg tttcagaaaa gtcaggtaat
       tttaaacact
    22021 tacgagagtt tgtgtttaaa aataaagatg ggtttctcta tgtttataag
       ggctatcaac
    22081 ctatagatgt agttcgtgat ctaccttctg gttttaaac tttgaaacct
       atttttaagt
    22141 tgcctcttgg tattaacatt acaaatttta gagccattct tacagccttt
       tcacctgctc
    22201 aagacatttg gggcacgtca gctgcagcct attttgttgg ctatttaaag
       ccaactacat
    22261 ttatgctcaa gtatgatgaa aatggtacaa tcacagatgc tgtttgattgt
       tctcaaaatc
    22321 cacttgctga actcaaatgc tctgttaaga gctttgagat tgacaaagga
       atttaccaga
    22381 cctctaattt cagggttgtt ccctcaggag atgttgtgag attccctaat
       attacaaaact
    22441 tgtgtccttt tggagaggtt tttaatgcta ctaaattccc ttctgtctat
       gcatgggaga
    22501 gaaaaaaat ttctaattgt gttgctgatt actctgtgct ctacaactca
       acatttttt
    22561 caacctttaa gtgctatggc gtttctgcca ctaagttgaa tgatctttgc
       ttctccaatg
    22621 tctatcgaga ttctttttgta gtcaaggggg atgatgtaag acaaatagc
       ccaggacaaa
    22681 ctggtgttat tgctgattat aattataaat tgccagatga tttttcatgggt
       tgtgtccttg
    22741 cttggaatac taggaacatt gatgctcactt caactggtaa ttataattat
       aaatataggt
    22801 atcttagaca tggcaagctt aggcccctttg agagagacat atctcaatgtg
       cctttctccc
    22861 ctgatggcaa accttgcacc ccacctgctc ttaattgtta ttggccatta
       aatgattatg
    22921 gttttacac cactactggc attggctacc aaccttacag agttgtagta
       ctttcttttg
    22981 aactttttaaa tgcaccggcc acggtttgtg gaccaaaatt atccactgac
       cttattaaga
    23041 accagtgtgt caattttaat tttaatggac tcactggtac tggtgtgtta
       actcttctt
    23101 caagagatt tcaaccattt caacaatttg gccgtgatgt ttctgatttc
       actgattccg
    23161 ttcgagatcc taaaacatct gaaatattag acatttcacc ttgcgctttt
       gggggtgtaa
    23221 gtgtaattac acctggaaca aatgcttcat ctgaagttgc tgttctatat
       caagatgtta
    23281 actgcactga tgtttctaca gcaattcatg cagatcaact cacaccagct
       tggcgcatat
    23341 atttctactgg aaacaatgta ttccagactc aagcaggctg tcttataggga
       gctgagcatg
    23401 tcgacacttc ttatgagtgc gacattccta ttggagctgg catttgtgct
       agttaccata
    23461 cagtttcttt attacgtagt actagccaaa aatctattgt ggcttatact
```

```
atgtctttag
    23521 gtgctgatag ttcaattgct tactctaata acaccattgc tataacctact
aacttttcaa
    23581 ttagcattac tacagaagta atgcctgttt ctatggctaa aacctccgta
gattgtaata
    23641 tgtacatctg cggagattct actgaatgtg ctaatttgct tctccaatat
ggtagctttt
    23701 gcacacaact aaatcgtgca ctctcaggta ttgctgctga acaggatcgc
aacacacgtg
    23761 aagtgttcgc tcaagtcaaa caaatgtaca aaaccccaac tttgaaatat
tttggtggtt
    23821 ttaattttc acaaatatta cctgaccctc taaagccaac taagaggtct
tttattgagg
    23881 acttgctctt taataaggtg acactcgctg atgctggctt catgaagcaa
tatggcgaat
    23941 gcctaggtga tattaatgct agagatctca tttgtgcgca gaagttcaat
ggacttacag
    24001 tgttgccacc tctgctcact gatgatatga ttgctgccta cactgctgct
ctagttagtg
    24061 gtactgccac tgctggatgg acatttggtg ctggcgctgc tcttcaaata
ccttttgcta
    24121 tgcaaatggc atataggttc aatggcattg gagttaccca aaatgttctc
tatgagaacc
    24181 aaaaacaaat cgccaaccaa tttaacaagg cgattagtca aattcaagaa
tcacttacaa
    24241 caacatcaac tgcattgggc aagctgcaag acgttgttaa ccagaatgct
caagcattaa
    24301 acacacttgt taaacaactt agctctaatt ttggtgcaat ttcaagtgtg
ctaaatgata
    24361 tcctttcgcg acttgataaa gtcgaggcgg aggtacaaat tgacaggtta
attacaggca
    24421 gacttcaaag ccttcaaacc tatgtaacac aacaactaat cagggctgct
gaaatcaggg
    24481 cttctgctaa tcttgctgct actaaaatgt ctgagtgtgt tcttggacaa
tcaaaaagag
    24541 ttgacttttg tggaaagggc taccacctta tgtccttccc acaagcagcc
ccgcatggtg
    24601 ttgtcttcct acatgtcacg tatgtgccat cccaggagag gaacttcacc
acagcgccag
    24661 caatttgtca tgaaggcaaa gcatacttcc ctcgtgaagg tgttttttgtg
tttaatggca
    24721 cttcttggtt tattacacag aggaacttct tttctccaca aataattact
acagacaata
    24781 catttgtctc aggaaaattgt gatgtcgtta ttggcatcat taacaacaca
gtttatgatc
    24841 ctctgcaacc tgagcttgac tcattcaaag aagagctgga caagtacttc
aaaaatcata
    24901 catccaccaga tgttgatctt ggcgacattt caggcattaa cgcttctgtc
gtcaacattc
    24961 aaaaagaaat tgaccgcctc aatgaggtcg ctaaaaattt aaatgaatca
ctcattgacc
    25021 ttcaagaatt gggaaaatat gagcaatata ttaaatggcc ttggtatgtt
tggctcggct
    25081 tcattgctgg actaattgcc atcgtcatgg ttacaatctt gctttgttgc
atgactagtt
    25141 gttgcagttg cctcaagggt gcatgctctt gtggttcttg ctgcaagttt
gatgaggatg
    25201 actctgagcc agttctcaag ggtgtcaaat tacattacac ataaacgaac
ttatggattt
    25261 gtttatgaga tttttttactc ttagatcaat tactgcacag ccagtaaaaa
ttgacaatgc
    25321 ttctcctgca agtactactc atgctacagc aacgataccg ctacaagcct
cactcccttt
    25381 cggatggctt gttattaggcg ttgcatttct tgctgttttt cagagcgcta
ccaaaataat
    25441 tgcgctcaat aaaaagatggc agctagccct ttataagggc ttccagttca
tttgcaattt
    25501 actgctgcta tttgttacca tcattcaca tctttttgctt gtcgctgcag
gtatggagc
    25561 gcaatttttg tacctctatg ccttgatata tttttctacaa tgcatcaacg
catgtagaat
    25621 tattatgaga tgttggcttt gttggaagtg caaatccaag aacccattac
```

```
tttatgatgc
    25681 caactacttt gtttgctggc acacacataa ctatgactac tgtataccat
ataacagtgt
    25741 cacagataca attgtcgtta ctgaaggtga cggcatttca acaccaaaac
tcaaagaaga
    25801 ctaccaaatt ggtggttatt ctgaggatag gcactcaggt gttaaagact
atgtcgttgt
    25861 acatggctat ttcaccgaag tttactacca gcttgagtct acacaaatta
ctacagacac
    25921 tggtattgaa aatgctacat tcttcatctt taacaagctt gttaaagacc
caccgaatgt
    25981 gcaaatacac acaatcgacg gctcttcagg agttgctaat ccagcaatgg
atccaattta
    26041 tgatgagccg acgacgacta ctagcgtgcc tttgtaagca caagaaagtg
agtacgaact
    26101 tatgtactca ttcgtttcgg aagaaacagg tacgttaata gttaatagca
tacttctttt
    26161 tcttgctttc gtggtattct tgctagtcac actagccatc cttactgcgc
ttcgattgtg
    26221 tgcgtactgc tgcaatattg ttaacgtgag tttagtaaaa ccaacggttt
acgtctactc
    26281 gcgtgttaaa aatctgaact cttctgaagg agttcctgat cttctggtct
aaacgaacta
    26341 actattatta ttattctgtt tggaacttta acattgctta tcatggcaga
caacggtact
    26401 attaccgttg aggagcttaa acaactcctg gaacaatgga acctagtaat
aggtttccta
    26461 ttcctagcct ggattatgtt actacaattt gcctattcta atcggaacag
gtttttgtac
    26521 ataataaagc ttgttttcct ctggctcttg tggccagtaa cacttgcttg
ttttgtgtt
    26581 gctgctgtct acagaattaa ttgggtgact ggcgggattg cgattgcaat
ggcttgtatt
    26641 gtaggcttga tgtggcttag ctacttcgtt gcttccttca ggctgtttgc
tcgtacccgc
    26701 tcaatgtggt cattcaaccc agaaacaaac attcttctca atgtgcctct
ccggggaca
    26761 attgtgacca gaccgctcat ggaaagtgaa cttgtcattg gtgctgtgat
cattcgtggt
    26821 cacttgcgaa tggccggaca ctccctaggg cgctgtgaca ttaaggacct
gccaaaagag
    26881 atcactgtgg ctacatcacg aacgctttct tattacaaat taggagcgtc
gcagcgtgta
    26941 ggcactgatt caggtttttgc tgcatacaac cgctaccgta ttggaaacta
taaattaaat
    27001 acagaccacg ccggtagcaa cgacaatatt gctttgctag tacagtaagt
gacaacagat
    27061 gtttcatctt gttgacttcc aggttacaat agcagagata ttgattatca
ttatgaggac
    27121 tttcaggatt gctatttgga atcttgacgt tataataagt tcaatagtga
gacaattatt
    27181 taagcctcta actaagaaga attattcgga gttagatgat gaagaaccta
tggagttaga
    27241 ttatccataa aacgaacatg aaaattattc tcttcctgac attgattgta
tttcatctt
    27301 gcgagctata tcactatcag gagtgtgtta gaggtacgac tgtactacta
aaagaacctt
    27361 gcccatcagg aacatacgag ggcaattcac catttcaccc tcttgctgac
aataaatttg
    27421 cactaacttg cactagcaca cactttgctt ttgcttgtgc tgacggtact
cgacatacct
    27481 atcagctgcg tgcaagatca gtttccacaa aacttttcat cagacaagag
gaggttcaac
    27541 aagagctcta ctcgccactt ttctcattg ttgctgtct agtattttta
atactttgct
    27601 tcaccattaa gagaaagaca gaatgaatga gctcacttta attgacttct
atttgtgctt
    27661 tttagccttt ctgctattcc ttgttttaat aatgcttatt atattttgct
tttcactcga
    27721 aatccaggat ctagaagaac cttgtaccaa agtctaaacg aacatgaaac
ttctcattgt
    27781 tttgacttgt atttctctat gcagttgcat atgcactgta gtacagcgct
```

```
       gtgcatctaa
    27841 taaacctcat gtgcttgaag atccttgtaa ggtacaacac taggggtaat
acttatagca
    27901 ctgcttggct ttgtgctcta ggaaaggttt taccttttca tagatggcac
actatggttc
    27961 aaacatgcac acctaatgtt actatcaact gtcaagatcc agctggtggt
gcgcttatag
    28021 ctaggtgttg gtaccttcat gaaggtcacc aaactgctgc atttagagac
gtacttgttg
    28081 ttttaaataa acgaacaaat taaaatgtct gataatggac cccaatcaaa
ccaacgtagt
    28141 gcccccccgca ttacatttgg tggacccaca gattcaactg acaataacca
gaatggagga
    28201 cgcaatgggg caaggccaaa acagcgccga ccccaaggtt tacccaataa
tactgcgtct
    28261 tggttcacag ctctcactca gcatggcaag gaggaactta gattccctcg
aggccagggc
    28321 gttccaatca acaccaatag tggtccagat gaccaaattg gctactaccg
aagagctacc
    28381 cgacgagttc gtggtggtga cggcaaaatg aaagagctca gccccagatg
gtacttctat
    28441 tacctaggaa ctggcccaga agcttcactt ccctacggcg ctaacaaaga
aggcatcgta
    28501 tgggttgcaa ctgagggagc cttgaataca cccaaagacc acattggcac
ccgcaatcct
    28561 aataacaatg ctgccaccgt gctacaactt cctcaaggaa caacattgcc
aaaaggcttc
    28621 tacgcagagg gaagcagagg cggcagtcaa gcctcttctc gctcctcatc
acgtagtcgc
    28681 ggtaattcaa gaaattcaac tcctggcagc agtaggggaa attctcctgc
tcgaatggct
    28741 agcggaggtg gtgaaactgc cctcgcgcta ttgctgctag acagattgaa
ccagcttgag
    28801 agcaaagttt ctggtaaagg ccaacaacaa caaggccaaa ctgtcactaa
gaaatctgct
    28861 gctgaggcat ctaaaaagcc tcgccaaaaa cgtactgcca caaaacagta
caacgtcact
    28921 caagcatttg ggagacgtgg tccagaacaa acccaaggaa atttcgggga
ccaagaccta
    28981 atcagacaag gaactgatta caaacattgg ccgcaaattg cacaatttgc
tccaagtgcc
    29041 tctgcattct ttggaatgtc acgcattggc atggaagtca caccttcggg
aacatggctg
    29101 acttatcatg gagccattaa attggatgac aaagatccac aattcaaaga
caacgtcata
    29161 ctgctgaaca agcacattga cgcatacaaa acattcccac caacagagcc
taaaaaggac
    29221 aaaaagaaaa agactgatga agctcagcct ttgccgcaga gacaaaagaa
gcagcccact
    29281 gtgactcttc ttcctgcggc tgacatggat gatttctcca gacaacttca
aaattccatg
    29341 agtggagctt ctgctgattc aactcaggca taaacactca tgatgaccac
acaaggcaga
    29401 tgggctatgt aaacgttttc gcaattccgt ttacgataca tagtctactc
ttgtgcagaa
    29461 tgaattctcg taactaaaca gcacaagtag gtttagttaa ctttaatctc
acatagcaat
    29521 ctttaatcaa tgtgtaacat tagggaggac ttgaaagagc caccacattt
tcatcgaggc
    29581 cacgcggagt acgatcgagg gtacagtgaa taatgctagg gagagctgcc
tatatggaag
    29641 agccctaatg tgtaaaatta attttagtag tgctatcccc atgtgatttt
aatagcttct
    29701 taggagaatg acaaaaaaaa aaaaaaaaa aaaaaa
//
```

NCBI | NLM | NIH
Department of Health & Human Services
Privacy Statement | Freedom of Information Act | Disclaimer